

Background

Cahto and the Wailaki tribal members on the Laytonville Rancheria, adjacent to the Laytonville Landfill, are concerned with potential health impacts from living by the landfill. In 2016, sampling by the Tribe found arsenic, lead and hexavalent chromium as contaminants of concern. Since then the Tribes and GreenAction have raised concerns with increased cancer and respiratory issues at the Rancheria and have advocated to CA and BIA that tribal members be relocated away from the landfill.

EPA reviewed the Tribe's analytical report and two subsequent sampling reports from BIA sampling conducted in 2017. The Tribe's 2016 analytical results showed minor hits of three metals; arsenic, lead, and hexavalent chromium. In 2017 BIA conducted two rounds of more extensive soil testing in 20 quadrants throughout the Rancheria. The results were similar for arsenic, no lead above Residential Screening Level and no detections of hexavalent chromium.

California Department of Toxic Substances Control collected samples at the landfill itself and we are waiting for those results.

The question for us is, is there evidence of elevated levels of constituents from the landfill that would result in an increased prevalence of illness to those living around it? Data to date does not indicate elevated levels of constituents that would lead us to recommend that DTSC or BIA consider relocation of people from their homes near the landfill.

Talking points

- 1) We share tribal concerns about elevated cancer rates and respiratory illness.
- 2) Based on the testing we have seen from the Rancheria we have not seen evidence of elevated levels of constituents that would result in an increased prevalence of illness.
- 3) We should know more about constituents found at the landfill when we get information from the DTSC sampling.
- 4) Region 9 will continue to support DTSC and BIA in their work with this community.

Laytonville Landfill and Health Concerns raised by Tribes at the Laytonville Rancheria

For meeting with GreenAction and Representative of the Wailaki Tribe from Laytonville Rancheria regarding agenda item 4. Contamination, health emergency on the Laytonville Rancheria and need to get residents out of harm's way.

Potential health impacts from the Laytonville Landfill have been long-term concerns for the Cahto Tribe and the Wailaki tribal members, who also reside on the Rancheria. More recently, sampling by the Tribe in 2016, called out arsenic, lead and hexavalent chromium as potential contaminants of concern. Five soil samples and three groundwater samples were collected and analyzed. Although this was a relatively small data set, the analytical results showed minor hits of three metals.

- Arsenic: Results ranged from 2-6 mg/kg. This is above the RSL of 0.68 mg/kg but below the natural background of 3-15 mg/kg near Laytonville.
 - Residential Screening Level (RSL) is a screening tool and EPA's residential remedial action level for cleanup of arsenic is 20 ppm or 20 mg/Kg.
- Lead: The lead (Pb) was generally below the residential RSL of 82 mg/kg (9.1, 12, 140, 13, and 5.2 mg/kg). Background Pb for this area is approximately 8-15 mg/kg, so the hit of 140 mg/kg may be anthropogenic. The landfill is one possible source of this minor Pb hit, but there may be other local Pb sources as well.
- Hexavalent chromium: The data showed two detections above the residential RSL of 0.3 mg/kg (6.6, 3.6 mg/kg). Although hexavalent chromium is typically sourced to human activity, it can occur under natural conditions, particularly in areas that have high total chromium, such as California's Coast Ranges.

The Tribes and GreenAction have raised concerns with increased cancer and respiratory issues at the Rancheria and have advocated to CA and BIA that tribal members need to be relocated away from the landfill.

In 2017 BIA conducted two rounds of more extensive soil testing in 20 quadrants throughout the Rancheria. The results were similar for arsenic, no lead above RSL and no detections of hexavalent chromium. One of the 20 composite samples had a Dioxin/Furan Toxicity Equivalency Quotient (TEQ) result of 5.66 ng/Kg. This is above the residential RSL of 4.8 ng/Kg or 4.8 ppt for Dioxin/Furans.

Phase I Soil Sampling Results: (from 20 composite samples)

- Arsenic: Results ranged from 2-8 mg/kg. Above the RSL of 0.68 mg/kg but below the natural background of 3-15 mg/kg.
- Lead: Results ranged from 5-22 mg/kg and were below the residential RSL of 82mg/kg
- Hexavalent chromium: All non-detect.
- Dioxin/Furans - TEQ: One composite sample had a result of 5.66 ng/Kg. This is above the residential RSL of 4.8 ng/Kg or 4.8 ppt. EPA's furan TEQ action level is 51 ppt for residential.

Phase II - primarily focused on the quadrants with higher dioxin/furan TEQ results

- Arsenic: Results were mostly below 5 mg/kg one at 10.3 mg/Kg a couple around 6-7 mg/Kg
- Dioxin/Furans – TEQ: One TEQ result that was 60.9 ng/Kg vs RSL of 4.8. and a handful of TEQ results just above RSL of 4.8 vs. EPA's furan TEQ action level is 51 ppt. This sample was taken at a location formerly used for open dumping/burring.

Laytonville Landfill and Health Concerns raised by Tribes at the Laytonville Rancheria

This spring, California Department of Toxic Substances Control collected samples at the landfill itself and we are waiting for those results.

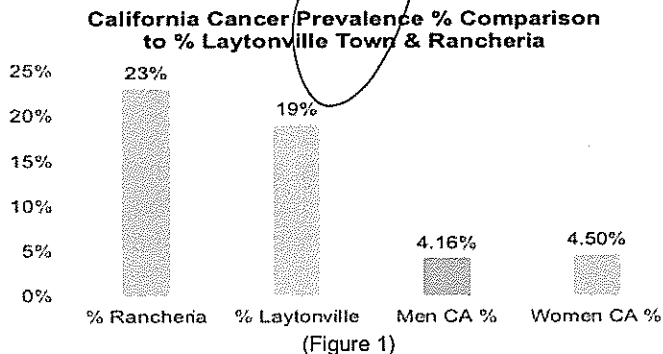
2005 ATSDR Public Health Assessment - In 2005 the Toxic Substances and Disease Registry (ATSDR) prepared a Public Health Assessment for the Laytonville Landfill. Very briefly, the assessment concluded there is a lack of conclusive evidence about past landfill contamination. However, since the landfill was closed and capped in 1997, current exposure risk is minimized. The assessment also concluded that the landfill does not significantly affect the air quality in the area. Low level VOCs may be coming from the landfill but do not pose a health hazard. The most significant impact to area air quality is open burning, wood-burning fireplaces and automobile traffic.

Initial Results of Laytonville, CA. Health Survey

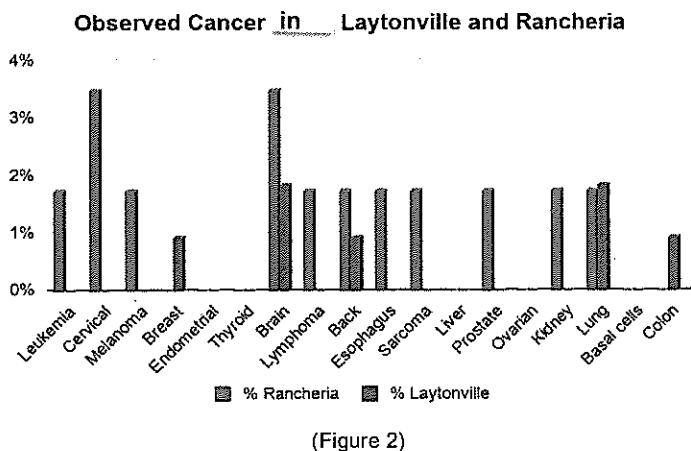
Laytonville residents, including tribal members, and Greenaction for Health and Environmental Justice, are conducting an extensive health survey due to concerns of old leaking landfills and reports of high incidents of illness and death. We confidentially interviewed residents about their current health conditions. This fact sheet provides updates on the health survey.

Cancer

After analyzing the first 169 Laytonville Community Health Surveys, it was found that **23%** of individuals living in the Laytonville Rancheria and **19%** in the town of Laytonville have been diagnosed with a type of cancer (Figure 1). According to the National Cancer Institute, in California, the prevalence of men with cancer is 4.16% and for women it's 4.5%. This tells us that those living in Laytonville appear to have cancer at a percentage **5 to 6 times** higher than the state average (Figure 1). These results appear to validate what the residents have mentioned for years.



At the Laytonville Rancheria, cervical (4%) and brain (4%) cancer were two of the most common cancer types (Figure 2). According to the National Cancer Institute, the national lifetime risk of getting cervical or brain cancer is approximately .6%. Thus, the percentages present in the Rancheria, based on survey results, are large percentages when compared to these lifetime risk statistics.

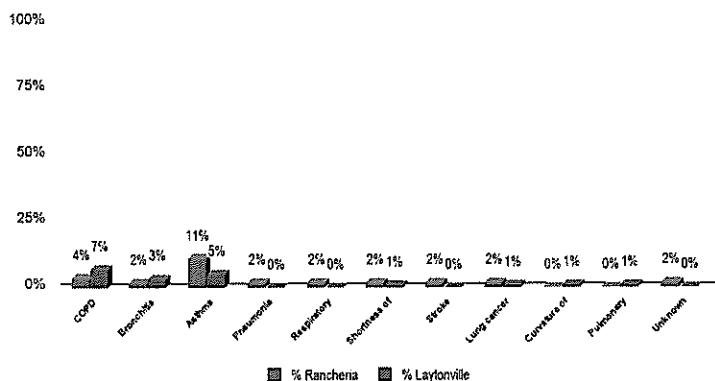


Respiratory Issues

Survey results indicated that **26%** of individuals living in the Rancheria have difficulty breathing and/or were diagnosed with a respiratory illness. The comparison to state average is on the way.

Asthma and COPD ranked the highest in both the Rancheria and the town of Laytonville. In the Rancheria, **11%** of individuals stated they had asthma, while it was only the case for **5%** of individuals in the town of Laytonville. In contrast, only **4%** of individuals in the Rancheria indicated they had been diagnosed with COPD, while it was the case for **7%** of those in the town of Laytonville (Figure 3). These numbers are higher in comparison to the national average being 8% for asthma and 6.4% for COPD.

Respiratory Illness/Lung Issues Observed: Laytonville and Rancheria

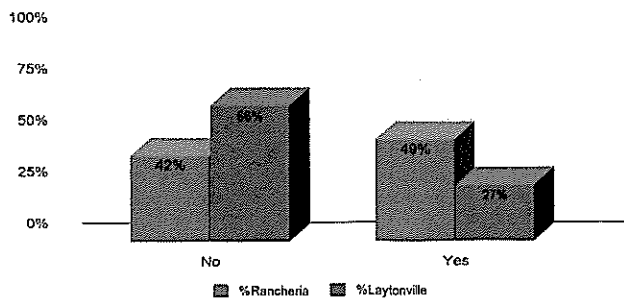


According to the World Health Organization (WHO), there are many environmental factors that contribute to respiratory issues. These factors include:

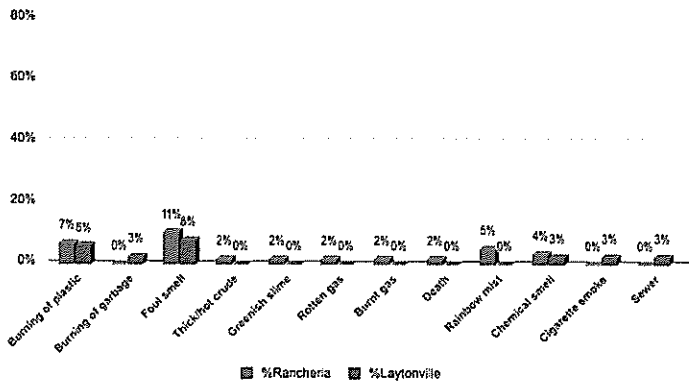
- Tobacco smoke
- Indoor/outdoor air pollution
- Occupational dusts
- Chemical irritants in the workplace

Almost **50%** of the individuals surveyed from the Rancheria indicated that they noticed unusual smells in the air (Figure 4). Some of the smells specified by individuals are described in Figure 5.

Air Quality Concerns: Laytonville and Rancheria



Smells Observed in Air



[Figure 5. Percentage of observed smells in the air by individuals in the Rancheria and the town of Laytonville]

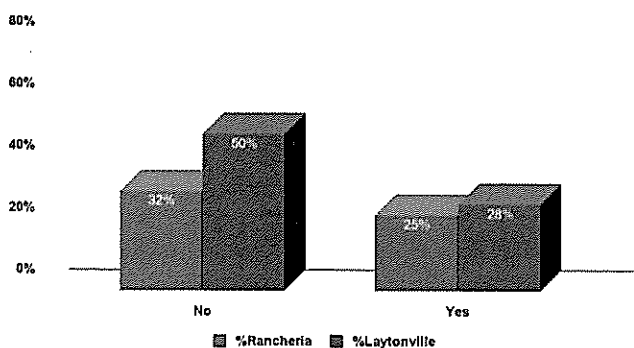
As the graph indicates, individuals who live in the Rancheria notice more strange/noxious smells in the air in comparison to those that live in the town of Laytonville. This seems to show a connection between strange/noxious smells in the air and respiratory illnesses observed in the Rancheria.

Health Issues in Pets

Many pets are also susceptible to environmental pollutants. According to the Environmental Working Group (EWG), pets share their living environments with humans and are exposed to chemicals produced by humans. Pets inhale polluted air, they drink tap water that contains contaminants, they consume pet-food that also contains many chemicals and they have direct contact with many house/garden products.

In the health survey, individuals were asked if they had pets or livestock with any health issues. In the Rancheria, 25% of individuals have pets with health issues, and in the town of Laytonville, 28% have pets with health issues (Figure 6).

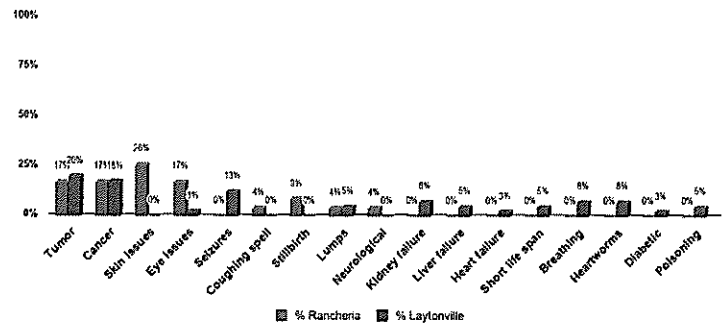
Pet Health Issues: Laytonville and Rancheria



(Figure 6)

The most common pet health issues reported by community members in the Rancheria are skin issues (26%), eye issues (17%), as well as tumors (17%). In the town of Laytonville, tumors (20%), cancers (18%), and seizures (13%) are the most common health issues reported (Figure 7).

Health Issues Observed in Pets: Laytonville and Rancheria



[Figure 7: Health issues observed in the pets of Laytonville and Rancheria community members]

Conclusion

The preliminary survey results indicate that there are concerning health issues in the town of Laytonville and the Rancheria and raise serious concerns for the community of Laytonville.

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